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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,494

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Takaaki Matsuwaki

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04/17/2009

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EXAMINER

LEE, DANIEL H.

ART UNIT

PAPER NUMBER

4122

MAIL DATE

DELIVERY MODE

04/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,494	Applicant(s) MATSUWAKI ET AL.	
	Examiner DANIEL LEE	Art Unit 4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060824</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 3, 7, 12-16 rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (US 6217996).**

3. Regarding claims 1 and 13, Yamamoto et al. (hereinafter Yamamoto) teaches a process for producing a synthetic resin film, comprising (A) a step of casting (col. 3, line 10; casting) and applying a composition containing a polymer (col. 3, line 10; polyamide solution) and an organic solvent (col. 4, line 17; organic solvent) onto a support (col. 4, line 63; support) to form a gel film (col. 4, line 54; polyimide precursor solution composition), (B) a step of stripping the gel film and heating the gel film with both ends being fixed (col. 4, lines 65; drying step, the solid film can be nipped at both side ends), and (C) a step of heating the film with both ends being released after step (B) (col. 4, lines 63-65; separated... optionally is further dried), wherein the thickness b of the film produced in step (B) and the thickness c of the film produced in step (C) satisfy the relationship $b > c$ (col. 7, line 12; Heat shrinkage). Further regarding claim 13, Yamamoto teaches the heating temperature in step (B) is lower than that in step (C) (col. 4, lines 54-64; dried at 100-200° C... further dried at 25-250°C).

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4. Regarding claims 3, 7, and 14-15, Yamamoto teaches heating in step (B) is performed at a maximum atmospheric temperature of 450° C or lower and heating in step (C) is performed at a maximum temperature of 430° C or higher (col. 4, lines 57-58; 100-200° C. and col. 5, lines 25-26; 400 to 500° C.).

5. Regarding claims 12 and 16, Yamamoto teaches the synthetic resin film comprises a polyimide (col. 5, line 41; polyimide film).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 6217996) as applied to claims 1, 3, 7, and 12-16 above.**

9. Yamamoto teaches the elements of claims 1, 3, 7, and 12-16 as discussed above in the rejection under 35 U.S.C. 102(b).

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10. Regarding claim 2, Yamamoto teaches heating under tension in the machine direction (col. 4, lines 66-67; under a certain tension... or both MD and TD directions and col. 5, lines 38-40; heating... under no tension or low tension for relaxation of stress) and that the tension is low (see col. 5, lines 38-40; under no tension or low tension). However, Yamamoto does not expressly teach the numerical range of the tension is 0.10 to 1.50 kg/mm².

11. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the range of tension by routine experimentation since the general conditions of the claim are disclosed in the prior art. See MPEP 2144.05 and *In re Aller* 220 F2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

12. Claims 3-5 and 8-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 6217996) as applied to claims 1-3, 7, and 12-16 above in view of Kato et al. (JP 03-055230).

13. Yamamoto teaches the elements of claims 1-3, 7, and 12-16 as discussed in the rejection under 35 U.S.C. 102 (b) and 35 U.S.C. 103(a) above.

14. Regarding claims 3-5 and 8-11, Yamamoto teaches the element of heating with hot air (col. 5. line 22; curing furnace) as discussed above.

15. Yamamoto does not expressly teach heating with radiant heat rays.

16. Kato et al. (hereinafter Kato) teaches heating with radiant heat rays and hot air (see abstract; IR rays and hot air blowing).

17. It would have been obvious to one of ordinary skill in the art at the time of the invention to heat treat a polyimide film as taught by Yamamoto, whether in step (B) or

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step (C) of the instant invention and in combination or simultaneously, with radiant heat rays or hot air as taught by Kato. The rationale to do so would be to improve heat treatment efficiency and to prevent a film from occurrence of waviness and wrinkling as taught by Kato (see abstract).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LEE whose telephone number is (571)270-7711. The examiner can normally be reached on Monday-Thursday, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. L./
Examiner, Art Unit 4122

/Timothy J. Kugel/
Primary Examiner, Art Unit 1796